Integrating Fashion With Community Engagement:
Case Study of PBL Approach to Pa-Kao-Ma Craftsmanship

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Abstract

In contemporary fashion education, revising learning approaches is crucial to align with the creative industry and community sustainability in Thailand. Project-Based Learning (PBL) is a key method for developing young fashion designers by integrating community involvement. This article explores the integration of PBL with Community Engagement through designing products from Pa kao ma (Traditional Thai checkered fabric), a valuable cultural heritage with potential for contemporary fashion. Pa kao ma is a traditional hand-woven fabric with a long history, mainly produced in central, northeastern, and northern Thailand. It varies in patterns and weaving techniques and is commonly used in daily life. However, the industry faces challenges due to shifting markets and changing consumer preferences. Adapting Pa kao ma to modern trends is essential for preserving and advancing local wisdom. This article presents PBL principles and a case study in fashion design education. The process involves collaboration with Pa kao ma weaving communities, where students learn from artisans and co-develop products, integrating knowledge and creativity to create unique designs. Key outcomes of applying PBL with Community Engagement include: 1) encouraging students to explore and analyze community identity through history, culture, and local wisdom, developing analytical skills to integrate cultural elements into fashion design; 2) fostering cultural appreciation and heritage conservation, particularly with Pa kao ma, by collaborating with communities to promote sustainable design. This approach enhances understanding of social and cultural issues, supporting the local fashion industry while promoting community sustainability and cultural heritage conservation.

Keywords: project-based learning, fashion design, community engagement, Pa-Kao-Ma, creative industry, community service

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Introduction

Over the past two decades, Thailand has continuously prioritized the promotion of the "Creative Economy" as a key national strategy to transition from a resource- and low-cost labor-dependent economy to one driven by innovation, creativity, and cultural capital (UNCTAD, 2010). This strategic orientation was clearly articulated in the 11th National Economic and Social Development Plan (2012–2016), which emphasized the use of "cultural capital" in conjunction with technology and innovation to enhance national competitiveness (Office of the National Economic and Social Development Board, 2011). Subsequently, this approach was advanced under the "Thailand 4.0" strategy, which aims to transform the economy from an "efficiency-driven economy" to an "innovation-driven economy" with the ultimate goal of fostering stability, prosperity, and sustainability.

The fashion industry is considered one of Thailand's most vital creative industries contributing significantly to economic development. According to the Creative Economy Agency (CEA, 2021), Thailand's fashion industry is valued at over 220 billion baht and generates approximately 400 billion baht in revenue annually. The sector continues to expand both domestically and internationally, particularly when Thai fashion products meaningfully incorporate local cultural identities. This approach has become a key strategy for strengthening the nation's soft power on the global stage.

Simultaneously, higher education institutions in Thailand play a crucial role in developing and producing fashion design professionals to meet industry demands. Currently, more than 25 universities and colleges nationwide offer bachelor's degree programs in fashion and apparel design, spanning faculties of fine arts, humanities, and creative industries. These programs graduate approximately 600–800 students annually. While most curricula focus intensively on technical skills in design, sewing, and garment production, there remain limitations in integrating local community and cultural contexts into the learning process. A major concern lies in the gap between theoretical classroom learning and the practical, sustainable application of cultural resources in design practices. Students are often trained to achieve technical and aesthetic excellence but lack exposure to the social, economic, and cultural dimensions of real target groups—particularly local communities, which are rich sources of cultural knowledge. As a result, many fashion students lack hands-on experience collaborating with communities—an essential component in inspiring innovative, culturally grounded fashion design. Empirical research has demonstrated that community engagement in design processes not only enhances students' professional skills but also fosters social responsibility and cultural awareness.

To address this gap, educational institutions must adapt their teaching approaches to reflect real-world complexities, particularly by creating "experiential learning" opportunities that allow students to engage directly with communities through participatory processes. One widely recognized method is Project-Based Learning (PBL), which facilitates deep learning by immersing students in authentic contexts. This approach promotes the development of professional competencies, life skills, and social consciousness simultaneously (Thomas, 2000).

This article explores the implementation of Project-Based Learning as a strategic approach to bridging the gap between theory-driven design education and the practical use of cultural resources within community contexts. Most fashion students lack experience working with communities, despite the fact that these communities offer invaluable local wisdom and

creative inspiration. The PBL approach aligns with Thailand's creative economy policies, which advocate for leveraging cultural assets in economic and social development.

The implementation of PBL for fashion students is demonstrated through a case study involving the design of products using Pa-Kao-Ma textiles, a traditional Thai fabric. This textile was selected for the case study due to its longstanding cultural and economic significance in Thailand. Pa-Kao-Ma is a hand-woven fabric characterized by unique regional identities and production methods that reflect the cultural heritage of local communities. Economically, Pa-Kao-Ma is a craft product that generates income for local communities, especially those engaged in creative adaptation for the fashion and souvenir industries. However, over recent decades, producers of Pa-Kao-Ma have faced numerous challenges, including declining domestic demand due to lifestyle changes in modern Thai society, which has led to reduced income and interest among younger generations in learning or continuing the craft. This trend has resulted in a significant reduction in the number of skilled weavers.

Therefore, applying the PBL approach in fashion education not only strengthens students' design capabilities but also fosters their understanding of cultural contexts and raises awareness about the importance of cultural heritage preservation.

Objectives

1. To study the models of Project-Based Learning (PBL) that allow fashion students to gain real-world learning experiences through community engagement.
2. To analyze the process of translating community identity into fashion design via PBL, using a case study on Pa-Kao-Ma product development.
3. To raise awareness of cultural heritage preservation and creative fashion design through the participatory transmission of the cultural value of Pa-Kao-Ma textiles.

Literature Review

Pa-Kao-Ma Textile

Pa-Kao-Ma is one of Thailand's traditional handwoven textiles with a long-standing presence in Thai society. Its use has been passed down through generations as part of everyday life. Historical and archaeological evidence indicates that Pa-Kao-Ma has been widely used since the 16th Buddhist century (approximately 950 CE), particularly in Central and Northeastern Thailand. The term "Pa-Kao-Ma" is believed to have originated from the Persian word kamarband, meaning waist or hip cloth. Through maritime trade and cultural exchange in Southeast Asia, the pronunciation evolved into the Thai term "Kao-Ma."

Community-Based Producers of Pha Khao Ma in Thailand

Pha Khao Ma (Thai loincloth) varies distinctly across different regions of Thailand, reflecting the unique ethnic and cultural characteristics of each local community. Due to its nature as a widely practiced form of indigenous textile craftsmanship, the exact number of Pha Khao Ma-producing communities in Thailand remains unclear. These communities are predominantly located in the Central, Northern, and Northeastern regions, each with its own distinctive weaving patterns and techniques.

Efforts are underway to compile comprehensive data and digital archives on Thai Pha Khao Ma. For example, the Institute of Thai Studies at Chulalongkorn University is currently developing a digital database of traditional Pha Khao Ma patterns, though the project has not yet been completed. Additionally, organizations such as Pracharath Rak Samakkee Social Enterprise (Thailand) Co., Ltd. have conducted surveys and compiled reports on Pha Khao Ma-producing communities. Their project, *Local Handicraft Pha Khao Ma*, identified over 276 communities engaged in its production across the country As a form of traditional Thai handicraft, Pha Khao Ma plays an important role in grassroots economic development, especially in agricultural and rural communities. The production and sale of Pha Khao Ma provides significant household income in provinces such as Lopburi, Sukhothai, Kanchanaburi, Maha Sarakham, and Buriram. These areas are known for their distinctive Pha Khao Ma and have successfully developed it into unique community-based products (Pracharath Rak Samakkee Scoial Enterprise, 2022).

Figure 1
Pha Khao Ma Varies Across Different Regions of Thailand

Source: https://prsthailand.com/download, pp. 12-13

Figure 2
Traditional Weaving Practices of Pha Khao Ma in Thailand

Source: https://prsthailand.com/download, pp. 54, 62

Market Challenges

Although Pha Khao Ma has been included in national creative economy strategies as a vital resource for the fashion, design, and lifestyle industries, its producers face several structural and contextual challenges:

Declining Domestic Demand and Traditional Uses

As Thai lifestyles modernize, traditional uses of Pha Khao Ma (e.g., as a body wrap, towel, or multipurpose cloth) have diminished. This has led to a reduced domestic market demand and negatively impacted the income of local producers (SACICT, 2019).

Lack of Contemporary Product Design and Innovation

Despite its unique weaving patterns, many producers continue to replicate traditional designs and lack the skills or resources to develop contemporary, market-relevant products. This limits their competitiveness in the fashion and commercial textile sectors.

Insufficient Collaboration With Educational Institutions & Creative Networks

Although rich in cultural capital, many communities lack opportunities to work with designers, academic institutions, or creative entrepreneurs to develop products for the fashion or lifestyle gift markets. Consequently, the potential to elevate Pha Khao Ma into a high-value creative product remains limited.

Project-Based Learning (PBL)

Project-Based Learning is a student-centered instructional approach that engages learners in real-world problems through hands-on project development. This method emphasizes critical thinking, planning, problem-solving, and collaboration, with the instructor acting more as a facilitator than a traditional lecturer (Thomas, 2000). Rooted in the philosophy of experiential learning—particularly the work of American philosopher John Dewey—PBL holds that meaningful learning occurs when students interact with real-world contexts. It involves inquiry, reflection, and active engagement, promoting deeper learning as opposed to superficial rote memorization (Dewey, 1938).

TeachThought (2021) outlines five essential stages for designing and managing a PBL curriculum, including identifying authentic problems, planning, conducting research, developing a solution, and presenting outcomes.

Five Stages of Project-Based Learning:

> **Phase 1: Project Planning**- Instructors define learning goals and structure the project, including identifying the *Driving Question*, the final *Student Product*, the skills to be developed, and assessment strategies. A sequence of learning activities is also mapped out during this stage.

> **Phase 2: Project Launch**- An *Entry Event* or *Hook* is organized to spark students' interest, followed by the introduction of the *Driving Question* and the *Authentic*

Audience. Students are encouraged to generate "Need to Know" questions, which initiate their process of self-directed inquiry.

Phase 3: Project Implementation- Students engage in hands-on group work, supported by the instructor acting as a *Facilitator*. This collaborative process helps students develop higher-order thinking skills such as analysis, evaluation, and the application of knowledge.

Phase 4: Project Conclusion- Students prepare to present their outcomes to a real audience. This stage focuses on purposeful communication and presentation skills. Instructors also conduct learning assessments at this point.

Phase 5: Project Debrief- Students reflect on their learning by linking project outcomes to community contexts through oral presentations. This includes self- and peer-assessment, as well as interactive sessions with community members to receive direct feedback from stakeholders.

Community Engagement

Community engagement involves higher education institutions working with partners to share knowledge, co-create activities, and achieve mutual benefits based on partnership and equity (Carnegie Foundation for the Advancement of Teaching, 2012).

This concept repositions educational institutions as intellectual leaders whose role extends beyond teaching and research to include societal engagement aimed at sustainable transformation. According to Ishisaka et al. (2004), community engagement is an academic endeavor that seeks to create, disseminate, apply, and preserve knowledge in ways that address the needs of various stakeholders—such as local communities, the private sector, and public organizations (Ishisaka et al., 2004).

Such engagement may take the form of academic service, community-based research, or student-centered learning projects that immerse learners in real-world experiences. By participating in community problem-solving, teamwork, and socially responsible activities, students gain a deeper understanding of social and cultural contexts.

Conceptual Framework

This study aims to analyze and apply Project-Based Learning in combination with Community Engagement as an integrated approach to teaching fashion design.

Figure 3

Integrating Fashion With Community Engagement Framework
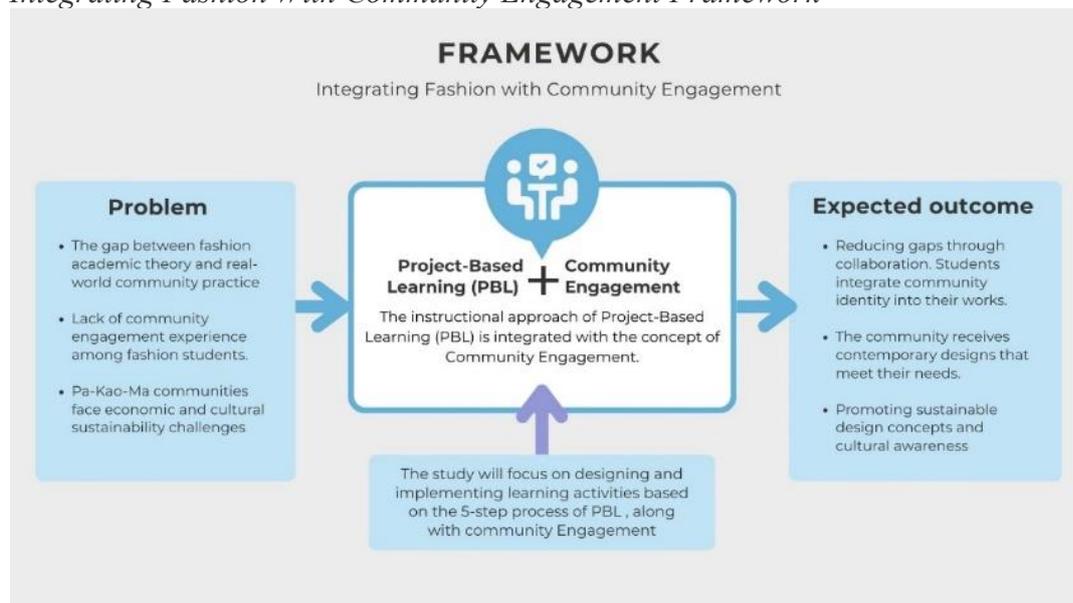
Source: Author (2025)

The framework seeks to:
- Connect academic learning with real-world practice,
- Equip students with critical and collaborative skills through project-based tasks,
- Foster meaningful interactions between students and community artisans,
- Promote cultural sustainability and product innovation within Pha Khao Ma producer communities.

Case Study: The Pha Khao Ma Product Development Project

To clearly illustrate the integration process of Project-Based Learning (PBL) with the concept of community engagement within the context of community-based fashion design, the author presents a case study of a sustainable Pha Khao Ma product development project. This academic service project is a collaboration between Bangkok University and the Cotton Design Community Enterprise in Pathum Thani Province. The project aimed to modernize Pha Khao Ma products to meet contemporary consumer demands, add value to traditional crafts, and promote sustainable creative economy development at the community level.

Cotton Design Community Enterprise

Located in Pathum Thani Province, the community enterprise was established in 2006 by residents of Bang Toei Subdistrict, Sam Khok District, who joined forces to create a local livelihood through handwoven cotton textiles. Over time, the group innovated by incorporating lotus stem fibers—an indigenous plant of Pathum Thani—into their cotton weaving process, resulting in unique *Pha Khao Ma* textiles. They later created their own brand "WORLACHA."

Pathum Thani is an ancient city situated along the Chao Phraya River in central Thailand. The name "Pathum Thani" means "City of Lotus." The province holds cultural and historical significance, especially for its temples and traditional Mon communities. Furthermore, it is a

hub for education, science, and technology, housing numerous universities and research institutes.

Project Implementation

The project involved 55 third-year fashion design students, who engaged in a five-step PBL learning process, integrating community participation at every stage. This approach enabled students to gain practical experience while contributing to the cultural and economic sustainability of the local weaving community.

Figure 4
Project Implementation Through PBL Learning Process
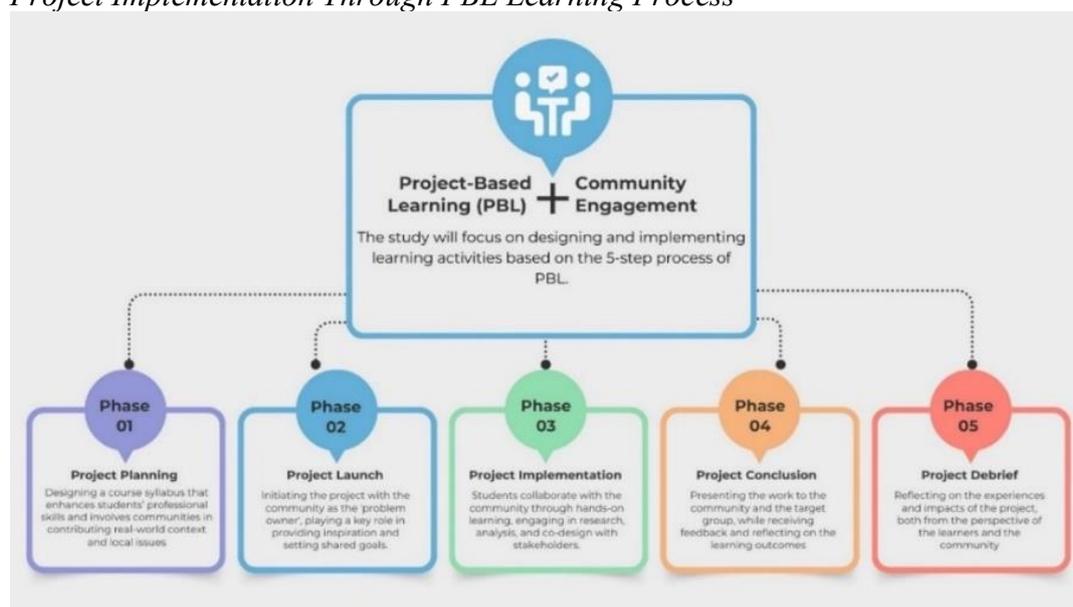
Source: Author (2025)

Phase 1: Project Planning – Collaborative Planning With the Community

Before the project begins, instructors and community representatives collaboratively plan the learning activities within the given timeframe.

Table 1
Project Planning

PBL Phase	Week	Topic / Activity	Details
01	-	Project preparation & Planning	- Instructors and community partners will collaboratively design the study plan by aligning course objectives with community needs
Course Syllabus			
02	W1-2	Project Introduction & Briefing	- Community representatives visit and provide project briefs in class - Students analyze the brief using design thinking tools
	W3–4	Theoretical Learning & Brief Analysis	- Lectures by instructors to build foundational knowledge - In-depth analysis of the project brief
03	W5	Field Trip & Data Collection	-Visit Cotton Design Community Enterprise Center - Knowledge exchange with local artisans and weavers

			- On-site data collection and observation of cultural context
			- Initial idea generation and inspiration for design concepts
	W6–10	Concept Development & Design Process	- Develop initial fashion product prototypes using Pa-khao-ma fabric
			- Experiment with materials, design techniques, and functionality
	W11–12	Prototyping & Final Design Development & Media Production	- Refine selected designs for final presentation
			- Photograph the final fashion products
			- Incorporate community feedback and improve the work
04	W13	Final Presentation	- Present the outcomes and evaluate the project together with the community
05	W16	Project Handover	- Officially hand over the final products and shared knowledge to public

Source: Author (2025)

Phase 2: Project Launch – Community Briefing and Design Challenge (Weeks 1–4)

Students participate in the project launch event where community representatives act as "brief providers." This enables students to understand the overall context and goals of the product development project, including the target audience. The Fashion Design Brief is as follows:

Design Brief

Students are required to design fashion products using locally woven textiles from the community as the primary material. The design must reflect collaborative learning with the community and embody the history, local wisdom, identity, and cultural context of both the textile and Pathum Thani Province.

Requirements

Students must use at least 20% of hand-woven textiles from the community in their designs.

Figure 5
Project Launch With Community Briefing

Source: Author (2025)

Phase 3: Project Implementation – Co-creation With the Community (Weeks 5–12)

Students work in groups to conduct market research, explore local knowledge, and design and develop fashion prototypes. Field visits include site observations and hands-on workshops, fostering mutual knowledge exchange between students and the community. Data collected from these interactions serves as inspiration for fashion concepts.This phase demonstrates a genuine participatory approach to community-based design.

Figure 6
Field Visits, Hands-On Workshops and Knowledge Exchange Between Students, Instructors and the Community

Source: Author (2025)

Key Inspirations From Pathum Thani Province:

Student Group 1: Wat Sian Pae Rong Si (Temple of Master Ngow Kim Khoey)

A revered spiritual site known for its peaceful atmosphere and associations with prosperity and wisdom. Surrounded by lotuses, the temple aligns with the province's name, "Pathum Thani" (City of Lotuses). Fashion inspiration may draw from Chinese temple architecture, auspicious motifs, red-gold color palettes, and lotus forms (petals, fiber patterns), translating into contemporary fashion symbolizing faith, fortune, and cultural elegance.

Table 2
Working Process and Final Product Designs

Note. This work was produced as part of a collaborative design project by Student Group 1.
Members - Radananvilas Siangloet, Jetnipat Ponggun, Snthida Sinphaiboonloed, Sukrit Kosakul, Parivat Anusri, and Kanyarat Treesee

Student Group 2: Lotus Cultivation and Lotus Fiber Use

Lotus farming and weaving with lotus fibers are integral to Pathum Thani's identity. Students translate elements such as lotus petal shapes, water droplets, and fiber textures into surface patterns or fabric structures, evoking softness, natural beauty, and deep cultural roots.

Table 3
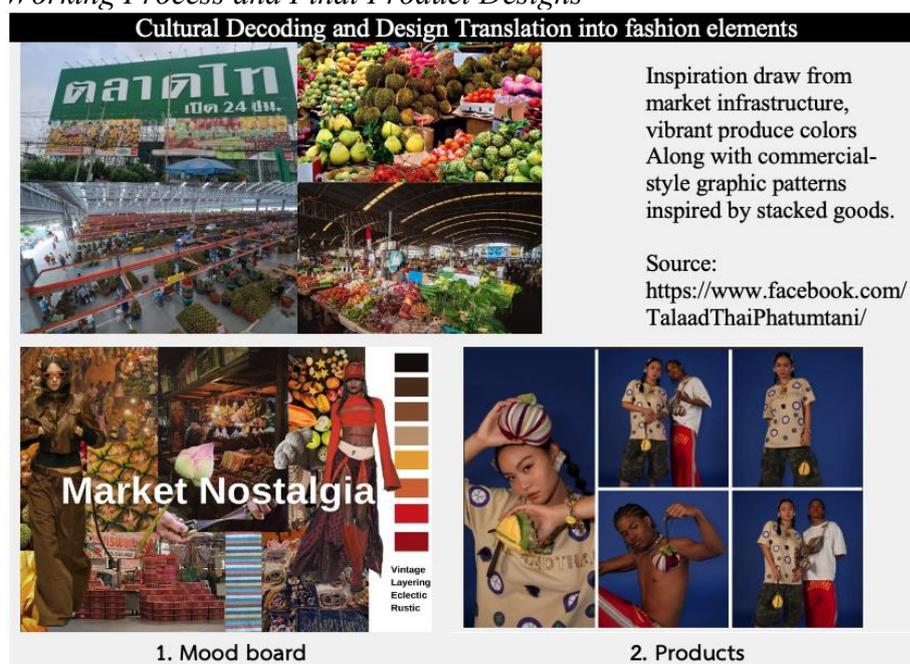*Working Process and Final Product Designs*
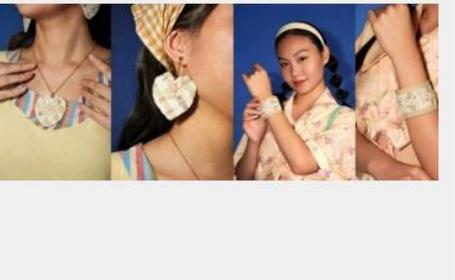
Note. This work was produced as part of a collaborative design project by Student Group 2.
Members -Phimchanok Panyanam, Aphisara Sukkawet, Kittipoom Neampraset, Panee Pikulkin, Chananchida Buntem, and Butsakorn Karnarun

Student Group 3: Talad Thai (Thai Wholesale Market)

As Thailand's largest agricultural wholesale market, Talad Thai represents diversity in produce and trading activities. Students inspired by market infrastructure, vibrant produce colors (e.g., banana yellow, watermelon red & pink). Along with commercial-style graphic patterns inspired by stacked goods.

Table 4
Working Process and Final Product Designs

Note. This work was produced as part of a collaborative design project by Student Group 3. Members - Simirun Nakwech, Nerin Liamma, Chayanit Wongsupha, Lalada Trisin, Chantacha Saewang, Nonthaphat Thongmani

Student Group 4: Flower Market

One of the largest flower plant markets in the central region, this site reflects the beauty, delicacy, and harmonious interaction between humans and nature. Designers may incorporate floral patterns, delicate embroidery, or nature-inspired forms, focusing on soft beauty and the detailed art of gardening and local craftsmanship.

Table 5
Working Process and Final Product Designs

Note. This work was produced as part of a collaborative design project by Student Group 4
Members - Chanisa Tantipalckul, Chanida Wongmitthae, Woravassu Adulayatham, Kunakorn Supprasert,
Pichayada Photoon, Nijawan Buraket, and Pimada Chamsuea

Phase 4: Project Conclusion – Presentation to Community and Feedback (Week 13)

Upon completion of their prototypes, students present their designs to the community. Community members provide feedback on aesthetic value, functionality. This phase reflects the shared learning outcomes and reinforces the bond between them.

Figure 7
*Presentation to Community and Feedback*

Source: Author (2025)

Phase 5: Project Debrief – Reflection and Sharing

Students formally communicate the results and impacts through public channels such as online platforms or knowledge dissemination events. This includes delivering final products and proposing future development or commercialization strategies to generate sustainable opportunities for the community.

Figure 8
Reflection and Sharing
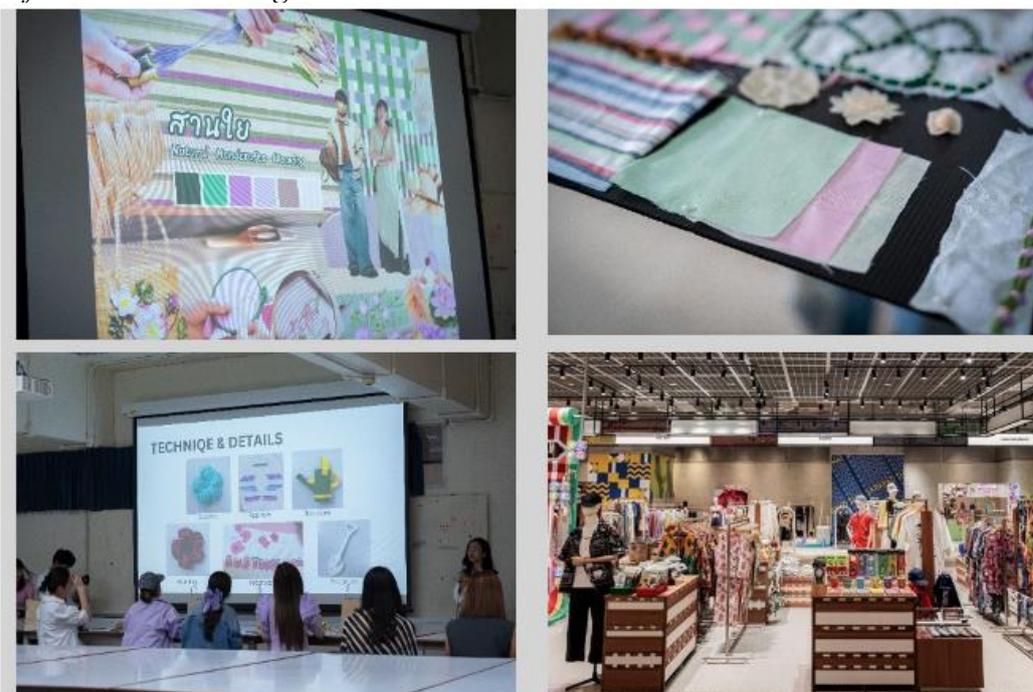
Note. The project was presented to business units from Sarapadthai Retail Shop with the aim of exploring potential avenues for commercial collaboration.

Results

Encouraging Students to Explore and Analyze Community Identity Through History, Culture, and Local Wisdom, Developing Analytical Skills to Integrate Cultural Elements Into Fashion Design

PBL enables students to deeply explore and interpret community identity, especially in Phase 3 through market research and field studies. Insights are analyzed and transformed into creative fashion concepts, with local identity interpretation categorized as follows:

Cultural and Architectural Identity: Group 1 – Wat Sian Pae Rong Si

> **Cultural Decoding:** Chinese architecture, auspicious colors, feng shui symbols (dragons, koi, coins) linked to prosperity.
> **Design Translation:** Graphic lines from architecture, red-gold-black palette, Chinese motifs, and modernized Chinese silhouettes

Lifestyle and Local Wisdom: Group 2 – Lotus Cultivation and Fiber Use

Cultural Decoding: Lotus in Buddhist practices and rare lotus fiber weaving, symbolizing grace and serenity.
Design Translation: Sheer fabrics like petals, pastel tones, and petal-inspired patterns.

Agricultural Wholesale Identity: Group 3 – Talad Thai Market

Cultural Decoding: A hub of agricultural trade, showcasing modern Thai market culture.
Design Translation: Market-inspired structures, bright produce colors, modular pockets, and repetitive graphic patterns.

Agricultural Lifestyle Identity: Group 4 –Flower Market

Cultural Decoding: Floriculture reflects beauty, care, and harmony with nature.
Design Translation: Floral patterns, embroidery, and soft textile techniques for organic aesthetics.

Fostering Cultural Appreciation and Heritage Conservation, Particularly of Pa Khao Ma, Through Community Collaboration for Sustainable Design

Key strategies to foster a conservation mindset:
Knowledge Exchange – Workshops and dialogues with local artisans for hands-on learning.
Community Field Visits – On-site studies of Pa Khao Ma textiles, their history, beliefs, and cultural meaning.
Creative Design Translation – Students reinterpret cultural data into new designs, deepening mutual understanding and appreciation.
Public Presentation – Final works showcased through fashion shows, highlighting Pa Khao Ma's story and its communities.

Discussion and Assessment Process

Quantitative data were collected from 50 students (90% of participants). A pre- and post-project survey using a 5-point Likert scale. The following indicators were assessed:

Table 6
Pre- and Post-participation Evaluation of Participant Learning and Engagement

Evaluation Topic	Before Participation	After Participation
1. Engagement and collaboration with the community	4.33	4.88
2. Appreciation for traditional craftsmanship and local knowledge	3.96	4.79
3. Interested in applying Pa Khao Ma to future product design.	3.88	4.54
4.Satisfaction with the learning experience	3.50	5.00

Students showed higher awareness of community roles (4.33→4.88), deeper cultural understanding of Pa Khao Ma (3.96→4.79), and increased interest in using it for future designs (3.88→4.54), highlighting PBL's effectiveness in linking cultural knowledge with creative practice.

Conclusion

This article presents the integration of Project-Based Learning (PBL) with community participation to enhance fashion design skills that are rooted in local cultural heritage. The case study focuses on collaborative product design using Pa Khao Ma textiles with a community enterprise in Pathum Thani Province. Students engaged in immersive fieldwork, explored community identities, exchanged knowledge with local artisans, and translated traditional wisdom into contemporary design concepts.Through the five key phases of PBL, students experienced deep learning, gained cultural sensitivity, and produced creative outputs that authentically reflected the community context. The process not only fostered social responsibility but also elevated traditional handicrafts by aligning them with contemporary market potential—enhancing both their quality and cultural value.

Acknowledgements

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